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socrative

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KNN/Regularization (Q8L9)

33% (7/21)

✓ 1. **The bias of an estimator (e.g. z^) equals...Hint: the OLS coefficients are unbias :)**
- (A) $E(z^\wedge) - z$
- (B) $E(z^2) - [E(z)]^2$
- (C) $[E(z^2) - E(z)]^2$
- (D) $E(z^2)$
- (E) I do not know

✓ 2. **The main idea of regularization is**
- (A) To introduce a small amount of bias in order to have less variance.
- (B) To introduce a small amount of variance in order to have less bias.
- (C) To introduce a small amount of variance and bias in order to have less bias.
- (D) I do not know

✗ 3. **How the tune of any parametr can be made**
- (A) using Cross validation
- (B) It is impossible
- (C) I do not now
- (D) using larger sample
- (E) only having population

✓ 4. **The ridge coefficient estimates shrink towards zero**
- (A) when lambda increases
- (B) when lambda decreases
- (C) when lambda = 0
- (D) I do not know

✓ 5. **Which one can shrink the slope all the way to 0?**
- (A) Lasso
- (B) Ridge
- (C) Regression
- (D) I do not know

✗ **6. When lambda = 0, we have**

- (A) Ridge *(marked red)*
- (B) Lasso
- (C) EL
- (D) Regression
- (E) I do not know

✗ **7. When alpha = 0, we have**

- (A) Ridge
- (B) Lasso *(marked red)*
- (C) EL
- (D) Regression
- (E) I do not know

✓ **8. Which function can help to perform cross-validation for regularization in R?**

- (A) cv.glmnet() *(marked green)*
- (B) cros_val()
- (C) glmnet(method = "cv")
- (D) I do not know

✗ **9. KNN is**

- (A) Data-driven
- (B) Model-driven
- (C) I do not now *(marked red)*

✗ **10. KNN is**

- (A) parametric method
- (B) non-parametric method
- (C) I do not know *(marked red)*

✓ **11. The dependent variable of the (OLS) regression is**

- (A) categorical
- (B) ordinal
- (C) continuous *(marked green)*
- (D) count
- (E) I do not know

✗ 12. The dependent variable of the classification is

(A) categorical

(B) numeric

(C) I do not know

✓ 13. How to chose K?

(A) pick own

(B) using cross-validation

(C) the largest one

(D) the smallest one

✗ 14. KNN can be used for regression

(A) Yes

(B) No

(C) I do not know

✗ 15. In the case of KNN classification we use

(A) average of outcomes

(B) majority voting scheme

(C) I do not know

✗ 16. Which of these errors will increase constantly by increasing k?

(A) train error

(B) test error

(C) both

(D) I do not know

✗ 17. This function can be used to perform KNN in R

(A) knn()

(B) k_nn()

(C) knnreg()

(D) knearneib()

(E) I do not know

✗ **18.   With the increase of k, the decision boundary will be**

(A) simplified

(B) more complex

(C) I do not know

(D) unchanged

✗ **19.   The best k correspond to**

(A) the lowest point of test error

(B) the lowest point of train error

(C) the highest point of test error

(D) I do not know

✗ **20.   KNN algorithm is sensitive to outliers**

(A) True

(B) False

(C) I do not know

✗ **21.   KNN**

(A) is a supervised learning algorithm.

(B) is an unsupervised learning algorithm.

(C) I do not know